

FIG. 1

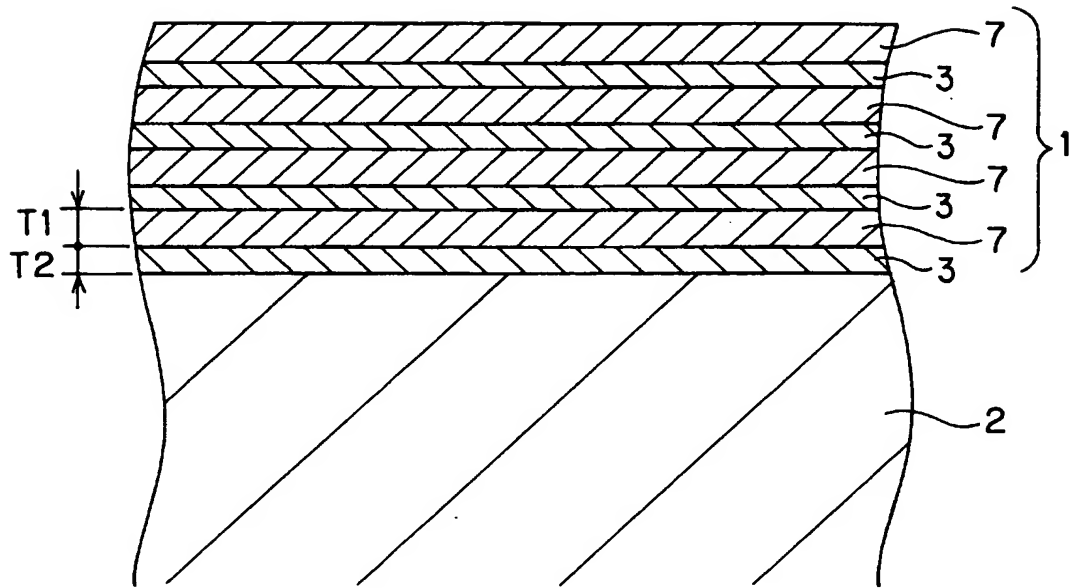


FIG. 2

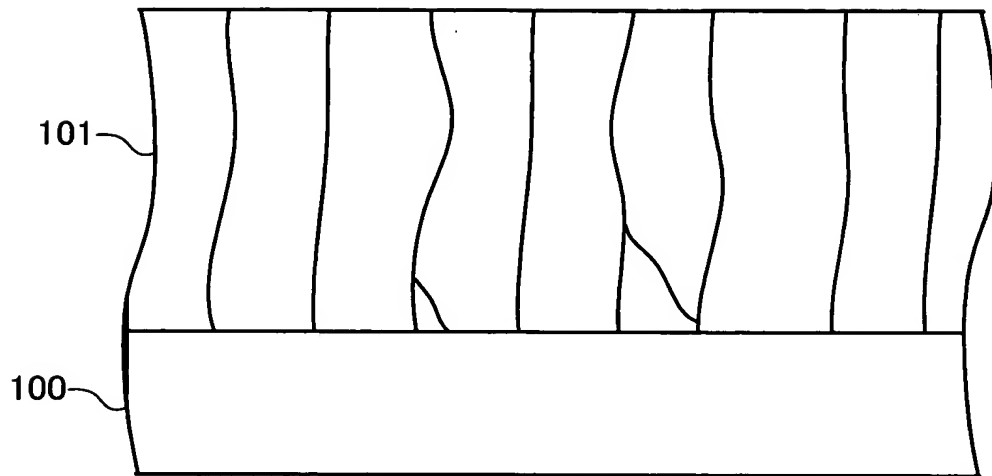


FIG. 3

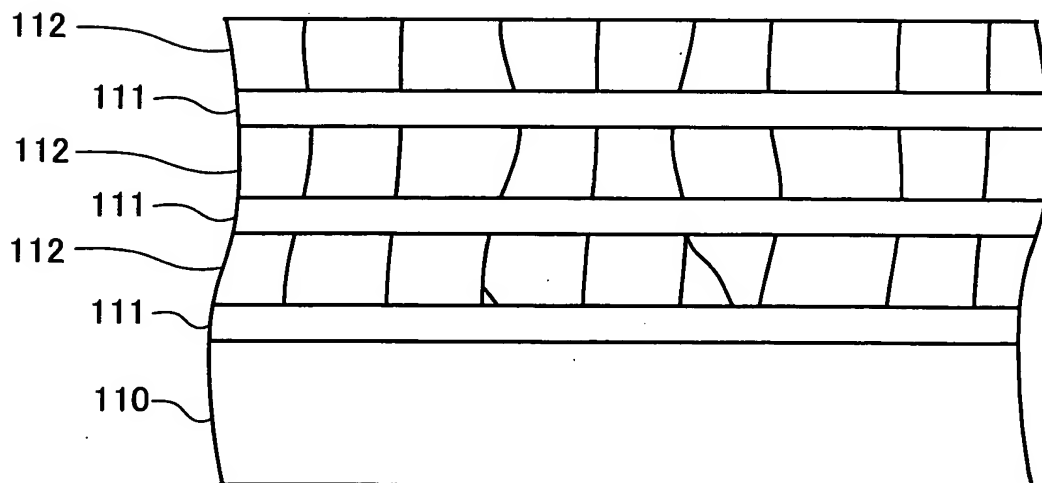


FIG. 4

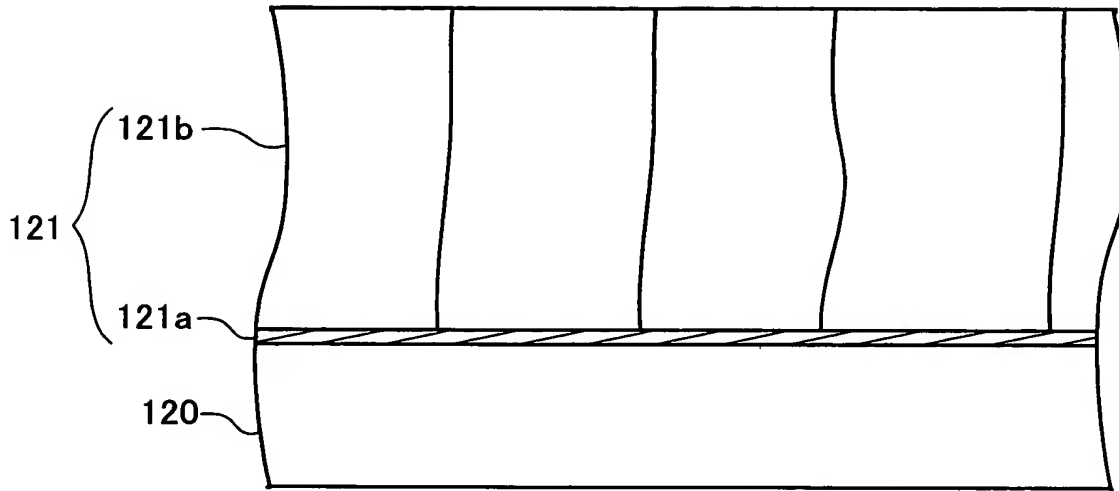


FIG. 5

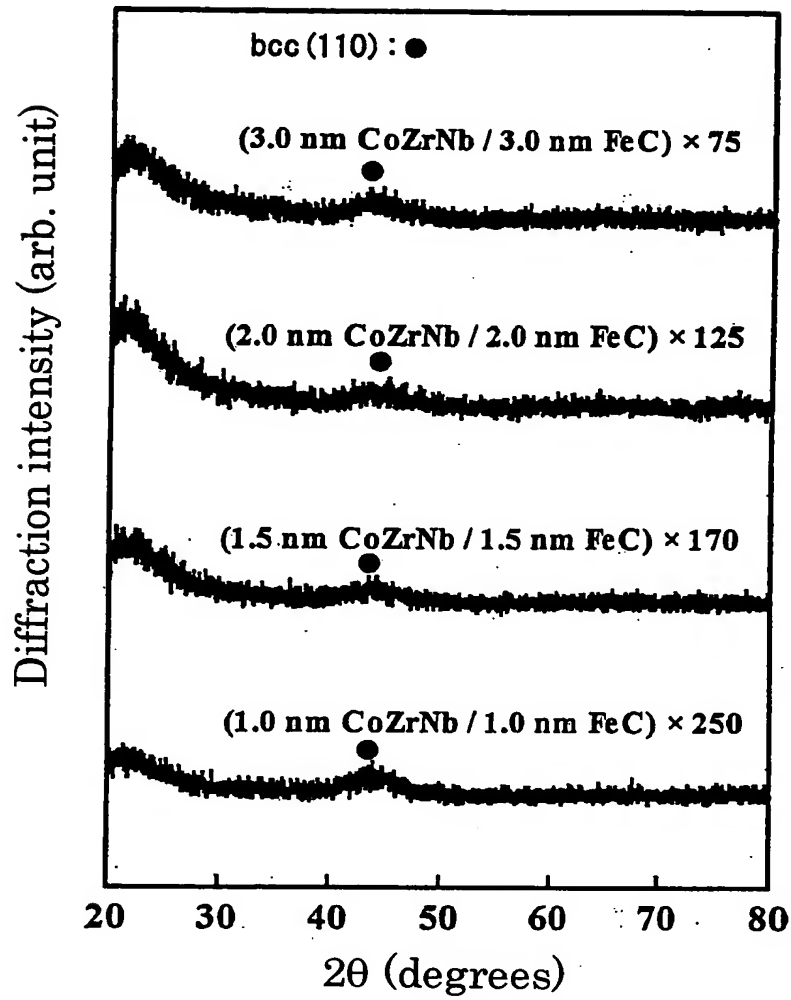


FIG. 6

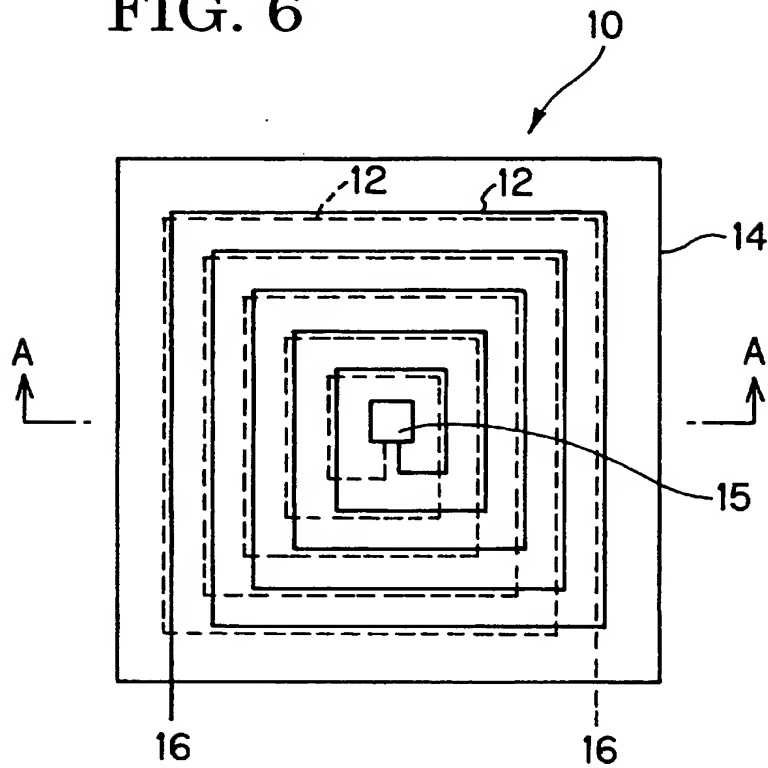


FIG. 7

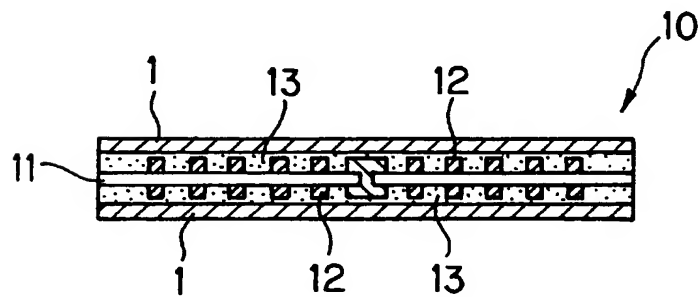


FIG. 8

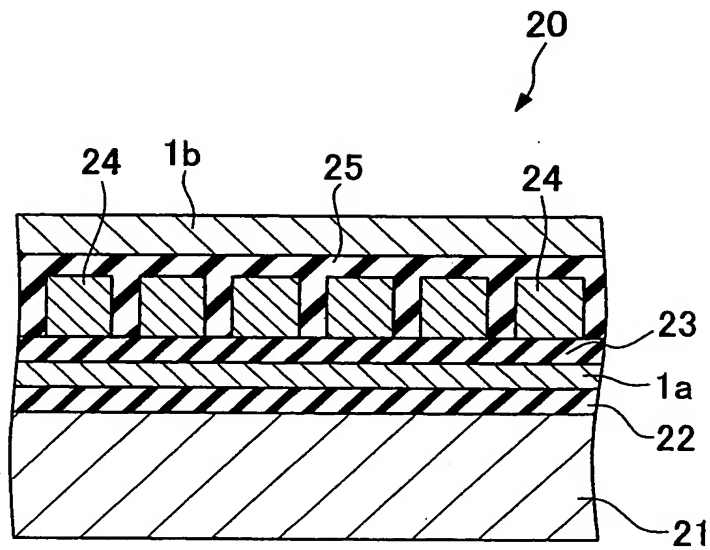


FIG. 9

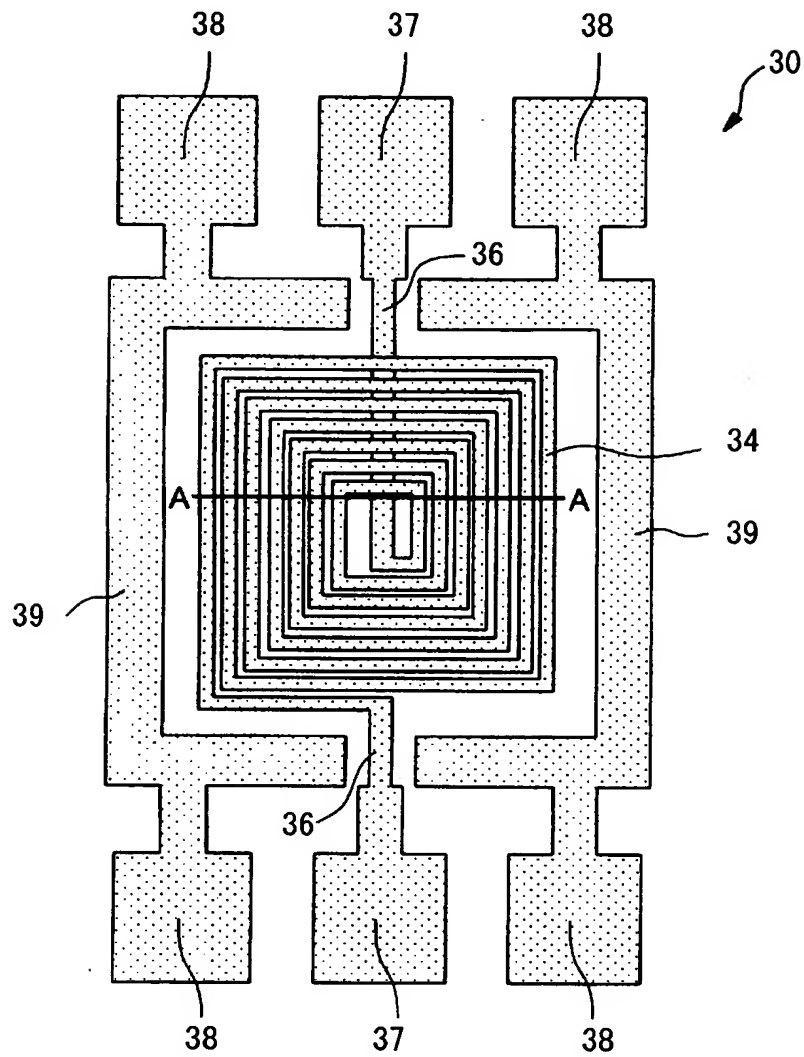


FIG. 10

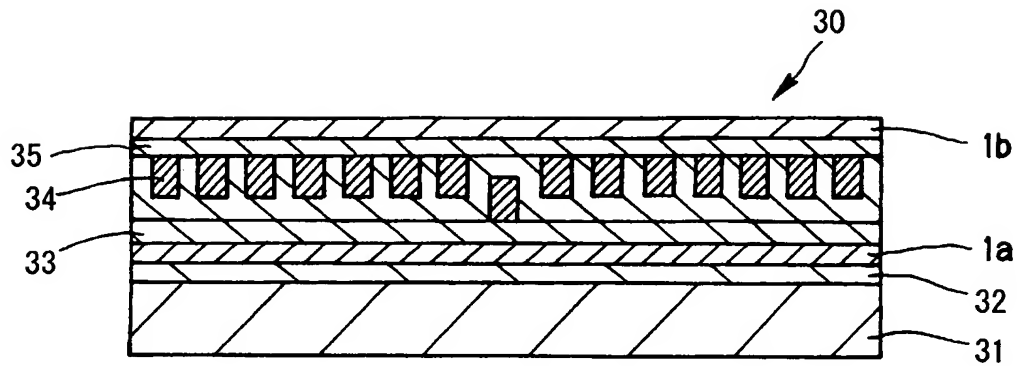


FIG. 11

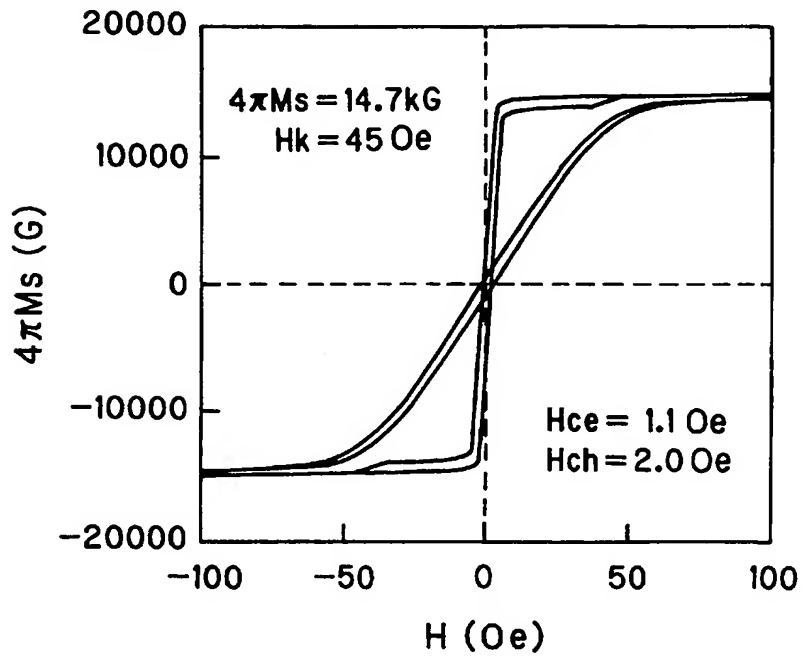


FIG. 12

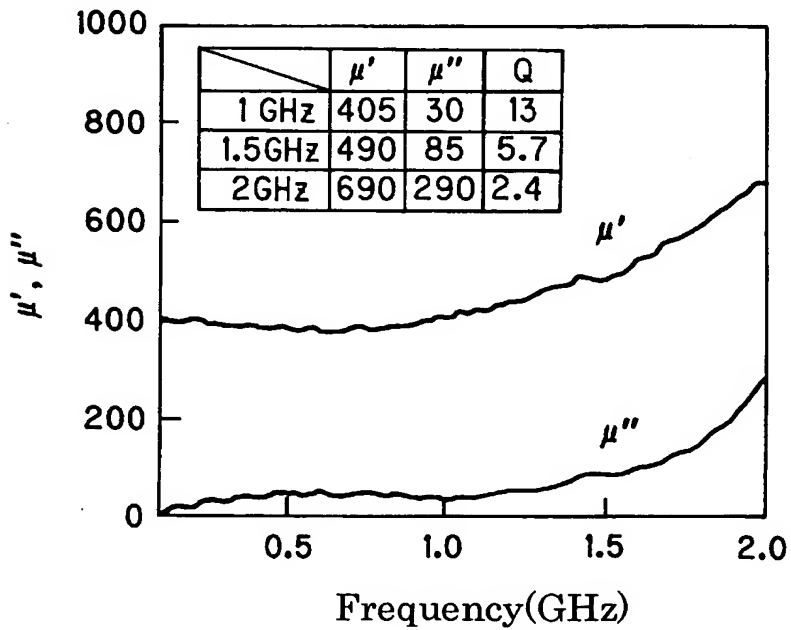


FIG. 13

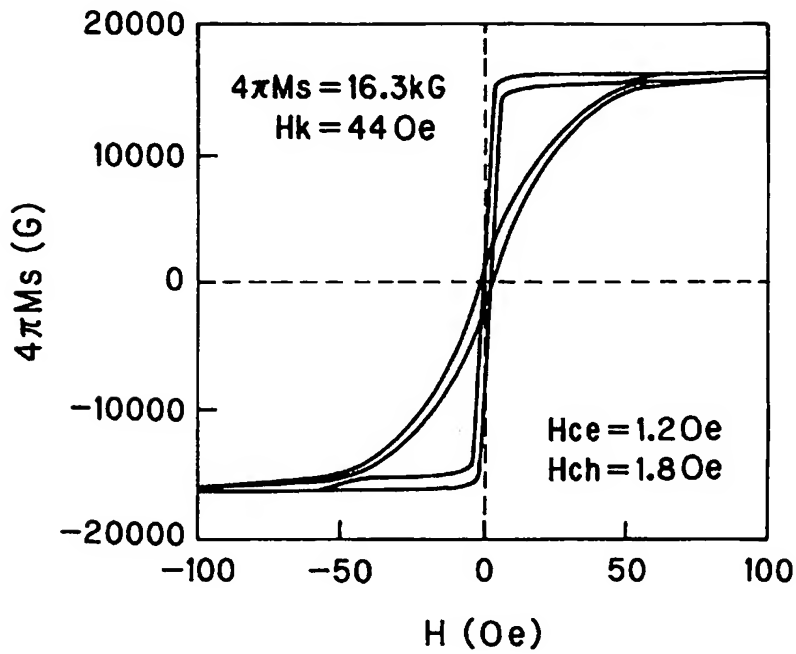


FIG. 14

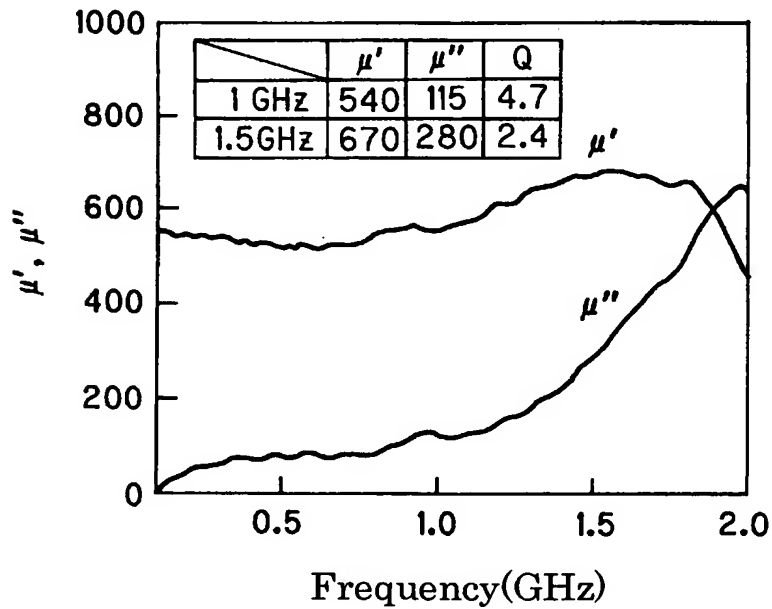


FIG. 15

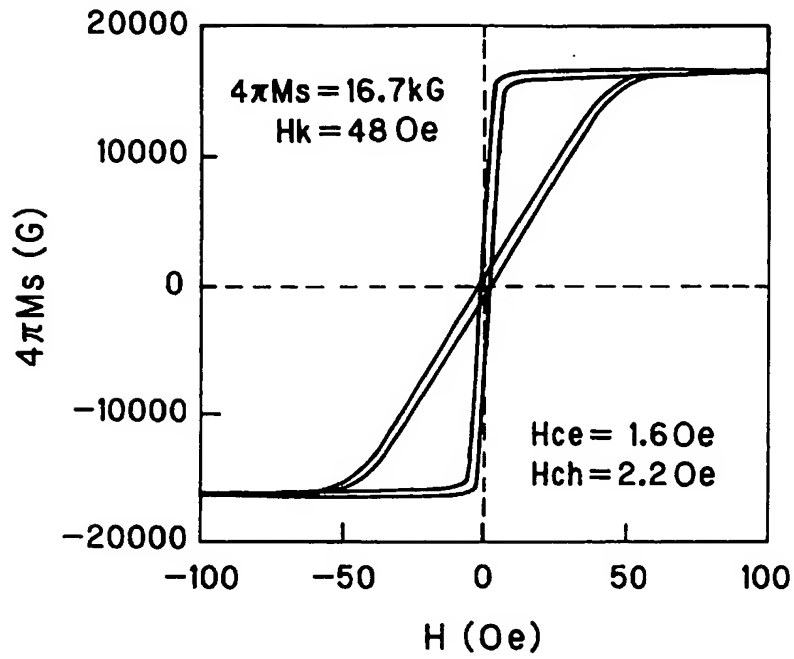


FIG. 16

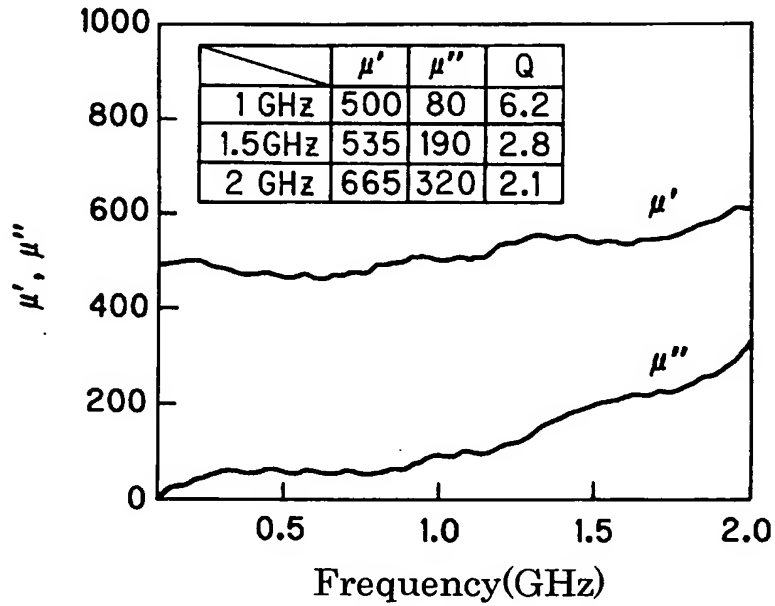
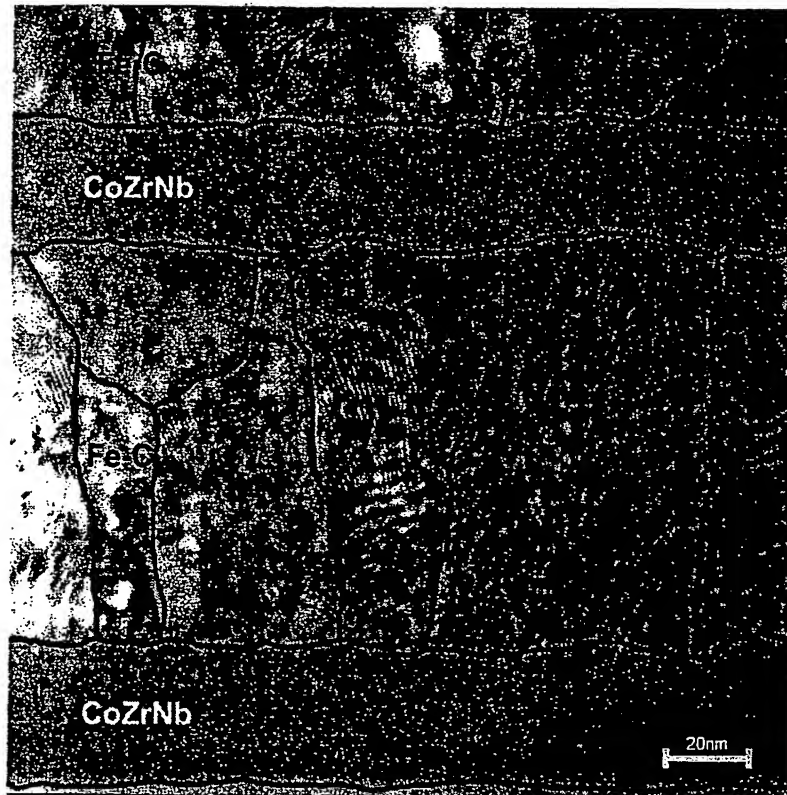


FIG. 17



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FIG. 18

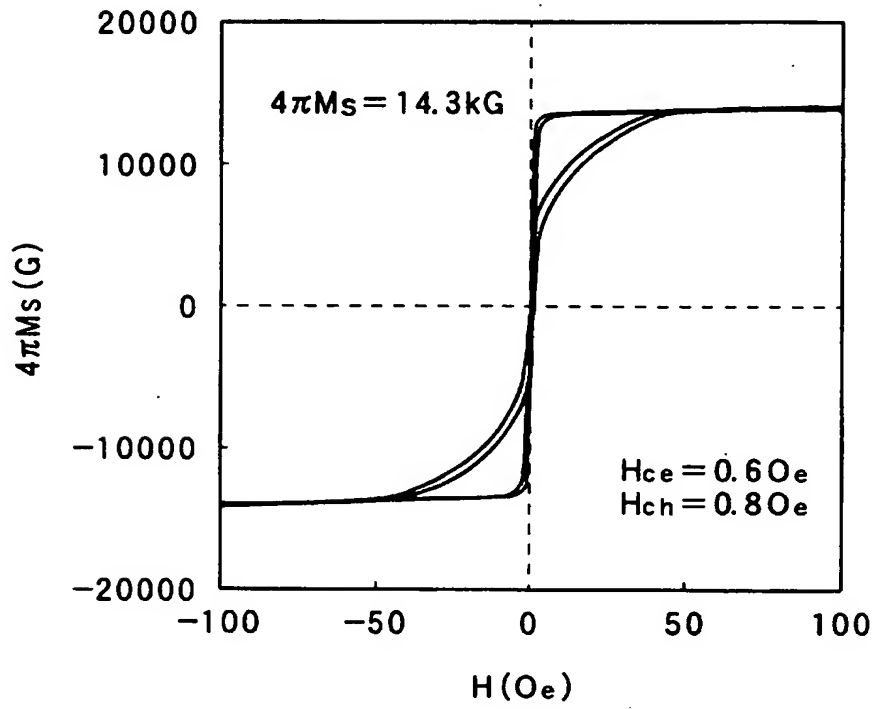


FIG. 19

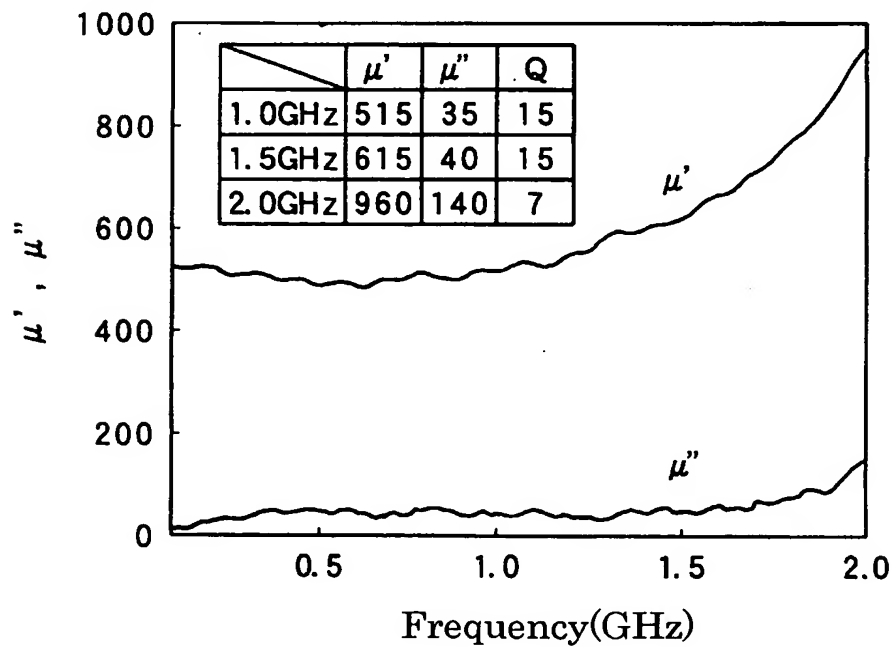


FIG. 20

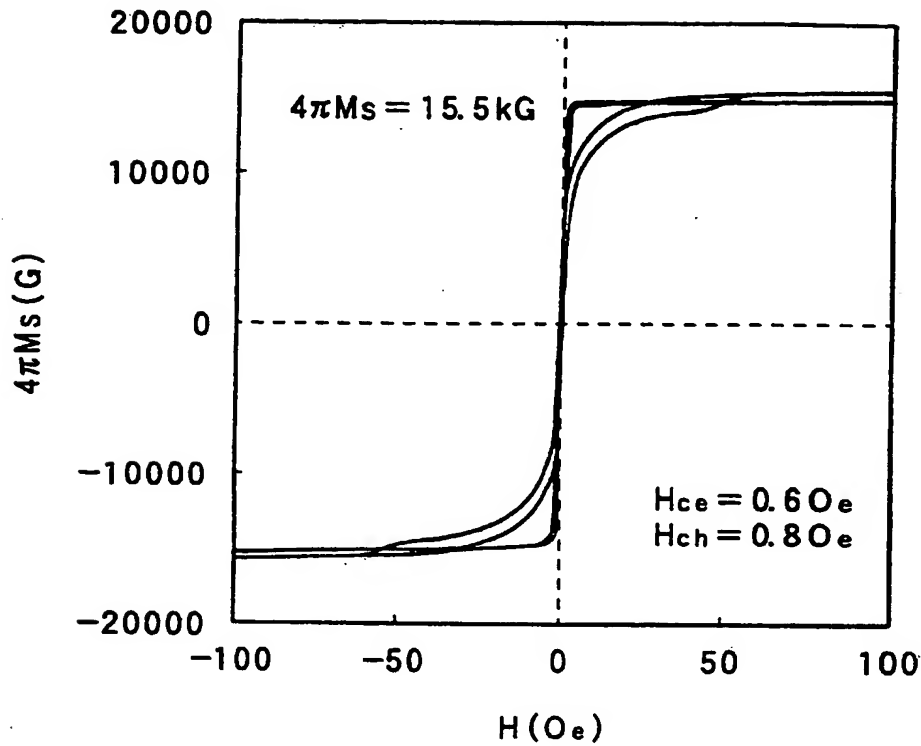


FIG. 21

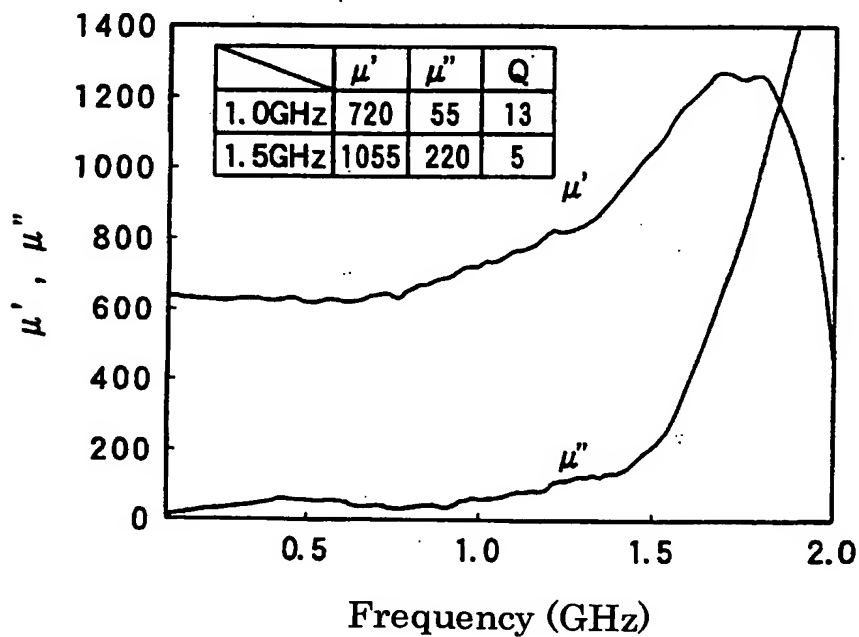


FIG. 22

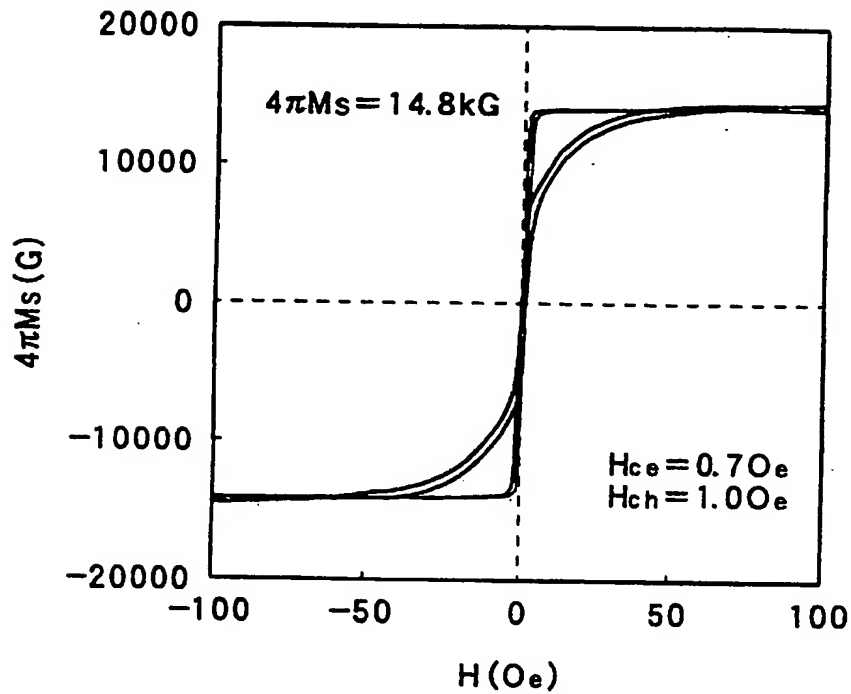


FIG. 23

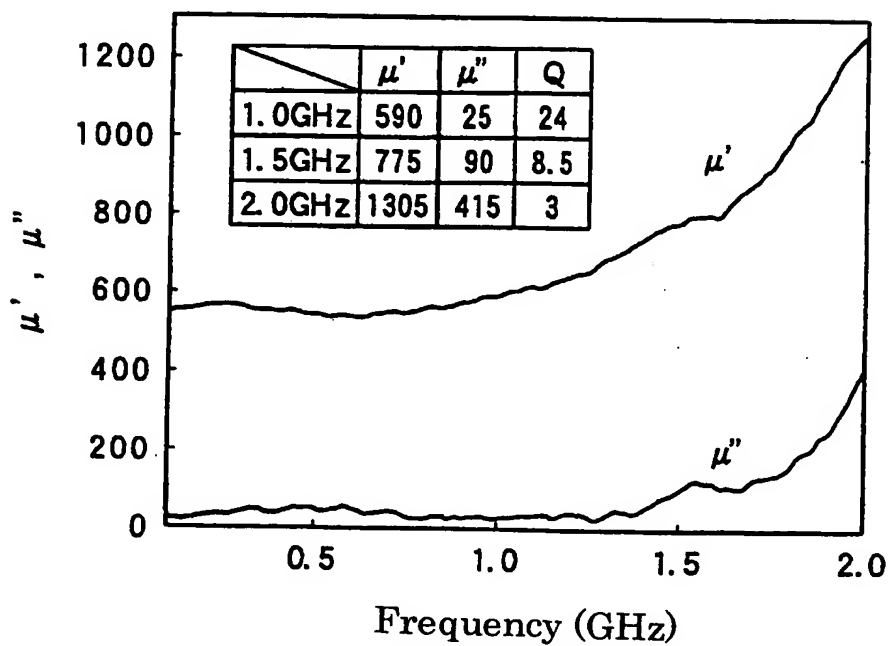


FIG. 24

	Magnetic thin film configuration	T1 (nm)	T1/T2	Saturation magnetization (T)	Anisotropy field (Oe)	Resonance frequency (GHz)	μ' (at 1GHz)	μ'' (at 1GHz)	Q (at 1GHz)	Resistivity ($\mu \Omega \text{ cm}$)	Coercivity H _{cc} (Oe)
Example 1	(20nm CoZrNb/5nm Fe-C ₅) x 20	5	0.25	1.47	45	>>2.0	405	30	13	90	1.1
Example 2	(20nm CoZrNb/20nm Fe-C ₅) x 13	20	1.00	1.63	44	>>2.0	540	115	4.7	60	1.2
Example 3	(20nm CoZrNb/50nm Fe-C ₅) x 7	50	2.50	1.67	48	>>2.0	500	80	6.2	50	1.6
Example 4	(20nm CoZrNb/2nm Fe-C ₅) x 20	2	0.10	1.25	20	1.5	900	700	1.3	100	1.1
Example 5	(20nm CoZrNb/80nm Fe-C ₅) x 20	80	4.00	1.80	92	>>2.0	200	25	8	48	2.8
Example 6	(20nm CoZrNb/5nm Fe-C ₇) x 20	5	0.25	1.47	42	>>2.0	410	30	14	90	1.0
Example 7	(20nm CoZrNb/5nm Fe-C ₁₀) x 20	5	0.25	1.45	40	>>2.0	490	45	11	88	1.0
Comparative Example 1	(20nm CoZrNb/50nm Fe) x 20	—	—	1.76	28	1.8	120	30	4	42	18.0
Example 8	(20nm CoZrTa/5nm Fe-C ₅) x 20	5	0.25	1.49	44	>>2.0	455	40	11	85	1.1
Example 9	(20nm CoFeZrB/5nm Fe-C ₅) x 20	5	0.25	1.47	48	>>2.0	410	35	12	105	1.2
Comparative 2 Example	500nm Co ₈₇ Zr ₅ Nb ₈	—	—	1.15	15	1.25	1091	1068	1	120	0.8
Comparative 3 Example	1000nm Co ₈₈ Zr ₆ Ta ₅	—	—	1.30	16	1.3	325	612	0.5	101	0.9
Comparative 4 Example	1000nm Co ₇₉ Fe ₉ Zr ₂ Ta ₁₀	—	—	1.10	36	1.8	327	191	1.7	125	1.1

FIG. 25

	Magnetic thin film configuration	T1 (nm)	T1/T2 (nm)	Saturation magnetization (T)	Resonance frequency (GHz)	μ' (at 1GHz)	μ'' (at 1GHz)	Q (at 1GHz)	Resistivity ($\mu \Omega \text{cm}$)	Coercivity H_{ce} (Oe)
Example 10	(1.0nm CoZrNb/1.0nm Fe-C ₅) x 250	1.0	1.0	1.43	>>2.0	515	35	15	150	0.6
Example 11	(1.5nm CoZrNb/1.5nm Fe-C ₅) x 170	1.5	1.0	1.55	~2.0	720	55	13	130	0.6
Example 12	(1.0nm CoZrNb/2.0nm Fe-C ₅) x 170	2.0	2.0	1.48	>>2.0	590	25	24	145	0.7
Example 13	(1.0nm CoZrNb/2.8nm Fe-C ₅) x 20	2.8	2.8	1.50	>>2.0	550	25	22	140	0.8
Example 14	(0.8nm CoZrNb/2.8nm Fe-C ₅) x 140	2.8	3.5	1.58	>>2.0	400	25	16	140	0.9
Example 15	(2.0nm CoZrNb/1.0nm Fe-C ₅) x 170	1.0	0.5	1.39	1.7	755	130	6	125	0.6
Comparative Example 5	(1.0nm CoZrNb/1.0nm Fe) x 250	—	—	2.07	—	150	—	—	70	4.2
Example 16	(1.0nm CoZrNb/1.0nm Fe-C ₇) x 250	1.0	1.0	1.41	>2.0	600	50	12	140	0.6
Example 17	(1.0nm CoZrNb/1.0nm Fe-C ₁₀) x 250	1.0	1.0	1.40	~2.0	750	60	12	130	0.6
Example 18	(1.0nm CoZrTa/1.0nm Fe-C ₅) x 250	1.0	1.0	1.44	>>2.0	520	35	15	150	0.6
Example 19	(1.0nm CoFeZrB/1.0nm Fe-C ₅) x 250	1.0	1.0	1.50	>>2.0	530	30	17	140	0.6

FIG. 26

	Magnetic thin film configuration	T1 (nm)	T1/T2	Saturation magnetization (T)	Anisotropy field (Oe)	Resonance frequency (GHz)	μ' (at 1GHz)	μ'' (at 1GHz)	Q (at 1GHz)	Resistivity ($\mu \Omega \text{ cm}$)	Coercivity H _{ce} (Oe)
Example 20	(20nm CoZrNb/5nm FeCo-C ₃) x 20	5	0.25	1.65	45	>>2.0	420	30	14	91	1.3
Example 21	(20nm CoZrNb/5nm Fe-B ₃) x 20	5	0.25	1.50	45	>>2.0	400	30	13	90	1.1
Example 22	(20nm CoZrNb/5nm Fe-Co-B ₃) x 20	5	0.25	1.62	43	>>2.0	410	35	12	88	1.2
Example 23	(20nm CoZrNb/5nm Fe-C ₅ -N ₅) x 20	5	0.25	1.51	40	>>2.0	420	35	12	93	1.0
Example 24	(20nm CoZrNb/5nm Fe-Co-C ₅ -N ₅) x 20	5	0.25	1.62	40	>>2.0	400	25	16	92	1.1
Example 25	(20nm CoZrNb/5nm FeCo-C ₂ -B ₂) x 20	5	0.25	1.62	43	>>2.0	410	35	12	89	1.1
Example 26	(20nm CoZrNb/2nm FeCo-C ₃) x 20	2	0.10	1.51	42	>>2.0	380	30	13	85	1.0
Example 27	(10nm CoZrNb/40nm FeCo-C ₃) x 20	40	4.00	1.80	102	>>2.0	350	30	12	48	1.9